

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 2, 4, and 22, and cancel claim 3 without prejudice, as shown in the following listing of claims, which will replace all prior versions and listings of claims in the application. Claims 1, 2, 4, 5 and 22 are pending in the application.

**Listing of claims:**

1 (currently amended). A method to prepare an isolated nucleic acid fusion molecule having a nucleotide sequence encoding ~~the a single-chain T-cell receptor comprising a~~ variable region of a ~~T-cell receptor (TCR)~~ mouse TCR  $\alpha$  chain fused to ~~the a~~ variable region of a mouse TCR  $\beta$  chain, said TCR  $\alpha$  and TCR  $\beta$  chains comprising a ~~non-human-mouse~~ TCR, wherein the single-chain TCR is specific for a tumor-associated antigen (TAA) and restricted by human HLA, which method comprises

- a. immunizing a transgenic ~~non-human mammal species~~ mouse, which produces human HLA, with an effective amount of said TAA to produce human HLA restricted cytotoxic T lymphocytes (CTL),
  - i. wherein the human HLA restricted CTL comprise:
    - a TCR  $\alpha$  chain nucleic acid molecule comprising a nucleic acid sequence encoding the variable region of a TCR  $\alpha$  chain; and
    - a TCR  $\beta$  chain nucleic acid molecule comprising a nucleic acid sequence encoding the variable region of a TCR  $\beta$  chain; and
  - ii. wherein the human HLA restricted CTL display a TCR that is comprised of the TCR  $\alpha$  chain and the TCR  $\beta$  chain, specific for said TAA and displayed in amounts sufficient to lyse tumor cells having said TAA;
- b. recovering the human HLA restricted CTL of step a;
- c. cloning or amplifying the TCR  $\alpha$  chain nucleic acid molecule and the TCR  $\beta$  chain nucleic acid molecule from the human HLA restricted CTL of step b to provide a TCR  $\alpha$  chain nucleic acid product comprising a nucleic acid sequence encoding the

variable region of the TCR  $\alpha$  chain and a TCR  $\beta$  chain nucleic acid product comprising a nucleic acid sequence encoding the variable region of the TCR  $\beta$  chain, respectively;

d. recovering the TCR  $\alpha$  chain nucleic acid product and the TCR  $\beta$  chain nucleic acid product of step c; and

e. fusing the recovered TCR  $\alpha$  chain nucleic acid product to the recovered TCR  $\beta$  chain nucleic acid product to prepare the isolated fused nucleic acid molecule, wherein the fused nucleic acid molecule comprises a sequence encoding a single-chain TCR comprising a variable region of the TCR  $\alpha$  chain fused to a variable region of the TCR  $\beta$  chain, wherein the single-chain TCR is specific for said TAA and human HLA restricted.

2 (currently amended). The method of claim 1 wherein said human HLA antigen is

A2.

3 (canceled).

4 (currently amended). The method of ~~claim 3~~ claim 1, wherein the cloning or amplifying step c comprises a polymerase chain reaction using primers derived from murine TCR.

5 (previously presented). The method of claim 4 wherein said primers are set forth in Figure 6 (SEQ ID NOS: 3-42).

6-21 (canceled).

22 (currently amended). The method of claim 1, wherein the single chain TCR of step e comprises a TCR derivative ~~that retains~~ comprising a TCR  $\alpha$  chain and a TCR  $\beta$  chain, wherein the TCR derivative retains the human HLA restriction and TAA-specificity characteristics of the TCR of step a.